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STUDIES ON NEBRIINI (COLEOPTERA: CARABIDAE),  
V. NEW NEARCTIC *NEBRIA* TAXA AND  
CHANGES IN NOMENCLATURE

By

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**ABSTRACT:** This paper introduces new Nearctic *Nebria* taxa and changes in nomenclature. Names are provided for 10 new species and 3 new subspecies (type locality in parentheses): *Nebria altisierrae* (Olmsted Point, Yosemite National Park, California), *N. campbelli* (Mount Baker, Whatcom County, Washington), *N. wallowae* (West Fork Wallowa River, Wallowa County, Oregon), *N. jeffreyi* (South Fork McCoy Creek, Harney County, Oregon), *N. haida* (Mount Needham, Graham Island, Queen Charlotte Islands, British Columbia), *N. louiseae* (Skedans, Louise Island, Queen Charlotte Islands, British Columbia), *N. gebleri albimontis* (Birch Creek, Mono County, California), *N. labonteii* (West Fork Wallowa River, Wallowa County, Oregon), *N. calva* (Mount Baldy, Apache County, Arizona), *N. sierrablancae* (Sierra Blanca, Lincoln County, New Mexico), *N. piute sevieri* (Parowan Creek, Iron County, Utah), *N. steensensis* (South Fork McCoy Creek, Harney County, Oregon), and *N. trifaria pasquineli* (Lefthand Creek, Boulder County, Colorado). For each, diagnostic combination of characters and notes on geographical distribution are provided and distinguishing features are illustrated. Changes in status are proposed for the following names (second name in each pair considered valid): *Nebria intermedia* Van Dyke = *N. crassicornis intermedia* Van Dyke; *N. sonorae* Kavanaugh = *N. acuta sonorae* Kavanaugh; *N. fragilis* Casey = *N. arkansana fragilis* Casey; *N. trifaria piute* Erwin and Ball = *N. piute piute* Erwin and Ball; and *N. trifaria utahensis* Kavanaugh = *N. piute utahensis* Kavanaugh. New synonymies proposed include: *Nebria arkansana uinta* Kavanaugh = *N. arkansana fragilis* Casey; *N. fragilis teewinot* Kavanaugh = *N. arkansana fragilis* Casey; and *N. trifaria tetonensis* Erwin and Ball = *N. trifaria trifaria* LeConte.

INTRODUCTION

For several years, I have been working on a monographic treatment of genus *Nebria* Latreille for the Nearctic Region. During that time, I have provided names for several new species and numerous new subspecies, designated lectotypes, and proposed certain nomenclatural changes (Kavanaugh 1979 and 1981). Validation of these new names and clarification of the status of existing names were needed to permit their proper use in various other reports by the author and several colleagues. Since 1981, additional spec-

imens and data have been acquired. Study of this new material has revealed 13 hitherto unknown taxa (10 species and 3 subspecies) as well as several nomenclatural problems with previously described taxa.

The purpose of this report, which serves as a final presentation of nomenclatural matters preliminary to submission of the monographic treatment, is to provide names for the new taxa and to present formally the needed nomenclatural changes. The latter include both new synonymies and other changes in status of names. As before,

these names are needed immediately for use in other manuscripts; and data and discussions presented for each name are limited to little more than the minimum required by the International Code of Zoological Nomenclature. More detailed information for all taxa, including those presented here as new, will be provided in the monograph.

#### MATERIALS AND METHODS

This report is based on examination of 1136 adult *Nebria* specimens, representing taxa described here as new, and over 80,000 additional specimens, representing previously described *Nebria* taxa, used for comparative purposes. Recognition of new synonymies and changes in status of taxa are based on study of this total specimen resource pool.

Following is a list of acronyms used in the text. These refer to collections from which specimens have been received and/or in which paratype specimens have been deposited. Curators responsible for collections during the course of my study are also listed; and I here acknowledge with sincere thanks their assistance in providing specimens for study on loan.

- ANSP—Academy of Natural Sciences, Philadelphia, Pennsylvania 19103; W. W. Moss.  
 BCPM—British Columbia Provincial Museum, Victoria, British Columbia V8V 1X4; R. A. Cannings.  
 CArm—C. Armin, 191 West Palm Avenue, Reedley, California 93654 (specimens deposited in CAS).  
 CAS—California Academy of Sciences, San Francisco, California 94118; D. H. Kavanaugh, H. B. Leech.  
 CNC—Canadian National Collection of Insects, Biosystematics Research Institute, Ottawa, Ontario K1A 0C6; R. de Ruelle, A. Smetana.  
 CUB—University of Colorado, Boulder, Colorado 80302; H. Rodeck.  
 CUIC—Cornell University, Ithaca, New York 14850; L. L. Pechuman.  
 DEUN—University of Nebraska, Lincoln, Nebraska 68503; B. C. Ratcliffe.  
 EAMa—E. A. Martinko, University of Kansas, Lawrence, Kansas 66044 (specimens deposited in CAS).  
 FMNH—Field Museum of Natural History, Chicago, Illinois 60605; H. Dybas, L. Watrous.  
 JRLa—J. R. La Bonte, 710 NW 11th, Corvallis, Oregon 97330.  
 KSUC—Kansas State University, Manhattan, Kansas 66502; H. D. Blocker.  
 LACM—Los Angeles County Museum of Natural History, Los Angeles, California 90007; C. L. Hogue.  
 MCZ—Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138; J. F. Lawrence, A. F. Newton, Jr.  
 MSU—Michigan State University, East Lansing, Michigan 48823; R. L. Fischer.

- OSUC—Ohio State University, Columbus, Ohio 43210; C. A. Triplehorn.  
 PJJo—P. J. Johnson, 1408 28th Street SE, Auburn, Washington 98002.  
 QCIM—Queen Charlotte Islands Museum, Skidegate, British Columbia V0T 1S0; N. Gessler and T. Gessler.  
 ROM—Royal Ontario Museum, Toronto, Ontario M5S 2C6; G. B. Wiggins.  
 RTBe—R. T. Bell, University of Vermont, Burlington, Vermont 05401.  
 UAFA—University of Arkansas, Fayetteville, Arkansas 72701; R. T. Allen.  
 UASM—University of Alberta, Strickland Museum, Edmonton, Alberta T6G 2E3; G. E. Ball.  
 UMMZ—University of Michigan, Ann Arbor, Michigan 48104; R. D. Alexander.  
 USNM—United States National Museum, Smithsonian Institution, Washington, D.C. 20560; T. L. Erwin.  
 UWEM—University of Wisconsin, Madison, Wisconsin 53706; L. J. Bayer.  
 ZMLS—Zoological Institute, University of Lund, Lund, Sweden; C. H. Lindroth, R. Danielsson.

Methods used in the present study, including measurement and dissection techniques and criteria for ranking taxa as species or subspecies, have been described in a previous paper (Kavanaugh 1979).

#### NEW *NEBRIA* SPECIES AND SUBSPECIES

The order of presentation of new species and subspecies below reflects a new classification of Nearctic *Nebria*, which will be provided in a monographic treatment of the genus now in preparation for publication. Except as noted, all specimens listed (by locality) in sections about geographical distribution have been designated as paratypes.

#### *Nebria altisierrae*, new species

(Figures 2, 15, 31)

*Nebria virescens*; KAVANAUGH 1978:345 (in part).

**HOLOTYPE**, ♂, in CAS, labelled: "U.S.A., California, Yosemite N. P., Sierra Nevada, Olmsted Point, 1.5 mi. sw. Tenaya Lk. on Tioga Rd., 2560m, 8 Nov. 1976 D. H. Kavanaugh"/"D. H. Kavanaugh Collection" [orange label]/"Holotype *Nebria altisierrae* n. sp. det. D. H. Kavanaugh 1983" [red label]/"California Academy of Sciences Type No. 14338." **PARATYPES**: five (four ♂ and one ♀), also deposited in CAS.

**TYPE-LOCALITY**.—Olmsted Point, 2560 m, Sierra Nevada, Yosemite National Park, California.

**DIAGNOSTIC COMBINATION**.—Head uniformly dark, without pale spots on vertex; labium with paraglossae distinct as short, pointed lateral lobes on apical margin of ligula; pronotum (Fig. 2) semiovoid, relatively short and moderately wide, ratio pronotal width to elytral width less than or equal to 0.75, basal sinuation of lateral margin

absent or short and very shallow, basal angles not or only moderately denticulate, midlateral seta present; elytra with silhouette subrectangular, not narrowed basally, humeri (Fig. 15) not or only faintly carinate; metepisternum impunctate; hind tarsus with all tarsomeres glabrous dorsally, fourth tarsomere truncate ventrally with medial and lateral apicoventral setae symmetrical in length and position; specimen from locality in Sierra Nevada of California (Fig. 31).

**DERIVATION OF TAXON NAME.**—The species epithet is a combination of the Latin word for “high” (= *altus*) and a shortened form of “Sierra Nevada,” in reference to the High Sierra region inhabited by members of this species.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 31. Known only from high elevations in the Sierra Nevada of California, from Tuolumne County south to Sequoia National Park. I have studied specimens from the following localities:

**United States of America**

CALIFORNIA: Sequoia National Park, Alta Meadow (2740 m) [Aug.] (2; CAS); Tuolumne County, Blue Canyon Lake (3110 m) [July] (1; CAS); Yosemite National Park, Olmsted Point (1.5 miles SW of Tenaya Lake [2560 m]) [Nov.] (3; CAS).

***Nebria campbelli*, new species**

(Figures 3, 16, 31)

*Nebria virescens*; KAVANAUGH 1978:345 (in part).

**HOLOTYPE**, ♂, in CAS, labelled: “U.S.A., Wash., Whatcom Co., Cascade Range, ne. slope Mt. Baker, Kulshan Ridge, 1460m–1520m, 11 Aug. 74 D. H. Kavanaugh”/ “D. H. Kavanaugh Collection” [orange label]/ “Holotype *Nebria campbelli* n. sp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14339.” **PARATYPES**: two (one ♂ and one ♀) deposited in CAS and CNC.

**TYPE-LOCALITY.**—Mount Baker, 1460–1520 m, Cascade Range, Whatcom County, Washington.

**DIAGNOSTIC COMBINATION.**—Head uniformly dark, without pale spots on vertex; labium with paraglossae distinct as short, pointed lateral lobes on apical margin of ligula; pronotum (Fig. 3) semiovoid, relatively long and narrow, basal sinuation of lateral margin short and moderately deep, basal angles markedly denticulate laterally, midlateral seta present; elytra with silhouette narrowed basally, nearly subovoid, humeri (Fig. 16) markedly carinate; metepisternum impunctate; hind tarsus with all tarsomeres glabrous dorsally, fourth tarsomere truncate ventrally with medial and lateral apicoventral setae symmetrical in length and position.

**DERIVATION OF TAXON NAME.**—I take plea-

sure in naming this species in honor of my friend and colleague J. Milton Campbell, who collected the only known female specimen of this species.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 31. Known only from the northern end of the Cascade Range and its flanking ranges, from Manning Provincial Park in southern British Columbia to Mount Baker in northern Washington. I have studied specimens from the following localities:

**Canada**

BRITISH COLUMBIA: Manning Provincial Park (Three Brothers Mountain [2130 m]) [July] (1; CNC).

**United States of America**

WASHINGTON: Okanogan County, Pasayten Wilderness (Bunker Hill Lookout [2120 m]) (1; CAS); Whatcom County, Mount Baker (NE slope on Kulshan Ridge [1520 m]) [Aug.] (1; CAS).

***Nebria wallowae*, new species**

(Figures 4, 17, 24, 31)

**HOLOTYPE**, ♂, in CAS, labelled: “U.S.A., Oregon, Wallowa County, Wallowa Mts., West Fork Wallowa River, 2070–2130m, 10 July 1982 Stop #82–16 D.H. & J. L. Kavanaugh colls.”/ “D. H. Kavanaugh Collection” [orange label]/ “Holotype *Nebria wallowae* n. sp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14347.” **PARATYPES**: 87 (36 ♂ and 51 ♀), deposited in CAS, CNC, JRLa, UASM, and USNM.

**TYPE-LOCALITY.**—West Fork Wallowa River, 2070–2130 m, Wallowa Mountains, Wallowa County, Oregon.

**DIAGNOSTIC COMBINATION.**—Pronotum (Fig. 4) with lateral explanation broad throughout, basal sinuation of lateral margin moderately deep, basal angles rectangular or slightly acute, moderately projected posteriorly, midlateral seta absent; elytra with silhouette subovoid, slightly narrowed basally, humeral angles not markedly rounded or obtuse, humeral carinae moderately developed, slightly projected anteriorly; hindwing full-sized, with reflexed apex distal to stigma; hind coxae bi- or plurisetose basally; middle tibiae dorsally concave or sulcate (at least near middle), with brush of dorsal setae moderately and densely developed; third to fifth visible abdominal sterna each with two or more pairs of posterior paramedial setae; median lobe of male (Fig. 17) long, very slender; bursa copulatrix of female (Fig. 24) with very small bursal sclerite; specimen from locality in Wallowa Mountains of Oregon (Fig. 31).

**DERIVATION OF TAXON NAME.**—This species is named for the Wallowa Mountains.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 31. Known only from the Willowa Mountains of northeastern Oregon. I have studied specimens from the following localities:

**United States of America**

OREGON: Willowa County, Glacier Lake (meadow below [2440 m]) [Sep.] (2; JRLa), Mirror Lake area ([2350 m]) [July] (5; CNC), West Fork Willowa River (0.25 to 0.5 miles NE of Frazier Lake [2040–2190 m], and small side stream [1980 m]) [July] (81; CAS, JRLa).

***Nebria jeffreyi*, new species**

(Figures 5, 31)

HOLOTYPE, ♂, in CAS, labelled: “U.S.A., Oregon, Harney County, Steens Mountains, South Fork McCoy Creek, 2290–2560m, 14 July 1982, Stop #82–22, D. H. & J. L. Kavanaugh colls.”/ “D. H. Kavanaugh Collection” [orange label]/ “adult specimen used in laboratory rearing of immature stages”/ “Holotype *Nebria jeffreyi* n. sp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14342.” PARATYPES: 35 (11 ♂ and 24 ♀), deposited in CAS, JRLa, PJJ, UASM, and USNM.

TYPE-LOCALITY.—South Fork McCoy Creek, 2390–2560 m, Steens Mountains, Harney County, Oregon.

**DIAGNOSTIC COMBINATION.**—Pronotum (Fig. 5) with lateral explanation broad throughout, apical angles very broad and rounded, basal angles rectangular, basal sinuation of lateral margin moderately deep, midlateral seta absent; elytra with silhouette subrectangular, not narrowed basally, humeral angles not markedly rounded or obtuse, humeral carinae absent or only slightly developed, not projected anteriorly; hind coxae bi- or plurisetose basally; middle tibiae dorsally concave or sulcate (at least near middle), with brush of dorsal setae moderately and densely developed; third to fifth visible abdominal sterna each with two or more pairs of posterior paramedial setae; specimen from locality in Steens Mountains of Oregon (Fig. 31).

**DERIVATION OF TAXON NAME.**—I take great pleasure in naming this species in honor of my son, Jeffrey L. Kavanaugh, who assisted me in collecting the first known specimens of this species.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 31. Known only from the Steens Mountains of southcentral Oregon. I have studied specimens from the following localities:

**United States of America**

OREGON: Harney County, Little Blitzen River ([2560 m]) [July] (10; PJJ), South Fork McCoy Creek ([2390–2560 m]) [July] (26; CAS, JRLa).

***Nebria haida*, new species**

(Figures 6, 31)

HOLOTYPE, ♂, in CAS, labelled: “Canada, British Columbia, Queen Charlotte Islands, Graham Island, 1.8 km N of Mt. Needham, 700m–780m, 18 July 1981, Stop #81–37, D. H. Kavanaugh collector”/ “D. H. Kavanaugh Collection” [orange label]/ “Queen Charlotte Islands Expedition—1981” [row of asterisks] “D. H. Kavanaugh Calif. Acad. Sciences”/ “Holotype *Nebria haida* n. sp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14341.” PARATYPES: 151 (68 ♂ and 83 ♀), deposited in BCPM, CAS, CNC, QCIM, UASM, and USNM.

TYPE-LOCALITY.—1.8 km N of Mount Needham, 700–780 m, Graham Island, Queen Charlotte Islands, British Columbia.

**DIAGNOSTIC COMBINATION.**—Size medium: standardized body length of male 9.0 to 10.5 mm, of female 9.4 to 10.8 mm; head relatively large and wide; pronotum (Fig. 6) relatively long and slender, with lateral explanation broad throughout, apical angles short, relatively broad and slightly rounded, basal angles rectangular, basal sinuation of lateral margin long, moderately deep, midlateral seta absent; elytra with silhouette subovoid, long and slender, distinctly narrowed basally, humeral angles not markedly rounded or obtuse, humeral carinae absent or only slightly developed, not projected anteriorly, intervals markedly convex; legs long, slender, femora and tibiae piceous; hind coxae bi- or plurisetose basally; middle tibiae dorsally concave or sulcate (at least at middle), with brush of dorsal setae moderately and densely developed; third to fifth visible abdominal sterna each with two or more pairs of posterior paramedial setae; specimen from locality in Queen Charlotte Islands, British Columbia (Fig. 31), from above treeline in alpine area.

**DERIVATION OF TAXON NAME.**—This species is named in honor of the Haida people, traditional inhabitants of the Queen Charlotte Archipelago.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 31. Known only from high elevations in the Queen Charlotte Islands, British Columbia. I have studied specimens from the following localities:

**Canada**

BRITISH COLUMBIA: Queen Charlotte Islands: Graham Island, Mount Needham (1.0 km [790–910 m] and 1.8 km [700–780 m] N) [July] (148; CAS); Moresby Island, Mount Moresby (northwest-facing cirque [910–1070 m]) [July] (4; CAS).

***Nebria louiseae*, new species**

(Figures 7, 31)

HOLOTYPE, ♂, in CAS, labelled: “B. C., Q. C. I. Louise Is.,

Skedans 11.VI.1981 R. A. Cannings"/ "Holotype *Nebria louiseae* n. sp. det. D. H. Kavanaugh 1983" [red label]/ "California Academy of Sciences Type No. 15005." PARATYPES: four ♀, deposited in BCPM, CAS, and CNC.

TYPE-LOCALITY.—Skedans, Louise Island, Queen Charlotte Islands, British Columbia.

DIAGNOSTIC COMBINATION.—Size large: standardized body length of male 10.4 mm, of female 10.6 to 11.0 mm; head relatively large and wide; pronotum (Fig. 7) relatively long and slender, with lateral explanation broad throughout, apical angles moderate in length, relatively narrow and pointed, basal angles rectangular, basal sinuation of lateral margin long, moderately deep, midlateral seta absent; elytra with silhouette subovoid, long and slender, distinctly narrowed basally, humeral angles not markedly rounded or obtuse, humeral carinae absent or only slightly developed, not projected anteriorly, intervals markedly convex; legs long, slender, femora and tibiae piceous; hind coxae bi- or plurisetose basally; middle tibiae dorsally concave or sulcate (at least at middle), with brush of dorsal setae moderately and densely developed; third to fifth visible abdominal sterna each with two or more pairs of posterior paramedial setae; specimen from locality in Queen Charlotte Islands, British Columbia (Fig. 31), from upper sea beach area.

DERIVATION OF TAXON NAME.—This species is named for Louise Island, on which the type locality is found.

GEOGRAPHICAL DISTRIBUTION.—Figure 31. At present known only from Louise Island, Queen Charlotte Islands. I have studied specimens from the following locality:

#### Canada

BRITISH COLUMBIA: Queen Charlotte Islands: Louise Island, Skedans [June] (5; BCPM).

#### *Nebria gebleri albimontis*, new subspecies

(Figures 1, 8, 18, 25, 32)

HOLOTYPE, ♂, in CAS, labelled: "U.S.A., California, Mono County, White Mts., Birch Creek, 3290m–3410m, 8 July 1980 D. Giuliani collector"/ "Collection of California Academy of Sciences, San Francisco, Calif."/"Holotype *Nebria gebleri albimontis* n. ssp. det. D. H. Kavanaugh 1983" [red label]/ "California Academy of Sciences Type No. 14340." PARATYPES: four (two ♂ and two ♀), also deposited in CAS.

TYPE-LOCALITY.—Birch Creek, 3290–3410 m, White Mountains, Mono County, California.

DIAGNOSTIC COMBINATION.—Head dark, with a pair of pale paramedial spots on vertex; antennal scape (Fig. 1) short, moderately thick; pronotum

(Fig. 8) with basal angles markedly acute, distinctly divergent posteriorly, margination of apical angles and anterior one-third of lateral margin very narrow, midlateral and basolateral setae present; elytra without metallic reflection, elytral silhouette subrectangular, hindwing full-sized; median lobe of male (Fig. 18) with preapical area markedly bulbous left dorsolaterally; bursa copulatrix of female (Fig. 25) with spermathecal chamber small, narrow in dorsal aspect; specimen from locality in White Mountains of California (Fig. 32).

DERIVATION OF TAXON NAME.—The subspecific epithet is a combination of the Latin words for "white" (= *albus*) and "mountain" (= *mons*), in reference to the White Mountains.

GEOGRAPHICAL DISTRIBUTION.—Figure 32. Known only from the type locality in the White Mountains of eastern California. I have studied specimens from the following locality:

#### United States of America

CALIFORNIA: Mono County, Birch Creek (3290–3410 m) [July] (5; CAS).

#### *Nebria labontei*, new species

(Figures 9, 32)

HOLOTYPE, ♂, in CAS, labelled: "U.S.A., Oregon, Wallowa County, Wallowa Mts., West Fork Wallowa River, 2040–2190m, 11 July 1982, D. H. & J. L. Kavanaugh Stop #82–17"/ "D. H. Kavanaugh Collection" [orange label]/ "adult specimen used in laboratory rearing of immature stages"/ "Holotype *Nebria labontei* n. sp. det. D. H. Kavanaugh 1983" [red label]/ "California Academy of Sciences Type No. 14343." PARATYPES: 57 (29 ♂ and 28 ♀), deposited in CAS, JRLA, UASM, and USNM.

TYPE-LOCALITY.—West Fork Wallowa River, 2040–2190 m, Wallowa Mountains, Wallowa County, Oregon.

DIAGNOSTIC COMBINATION.—Size very large: standardized body length of male greater than 11.5 mm, of female greater than or equal to 12.0 mm; head moderate in size, dark, with a pair of pale paramedial spots on vertex; pronotum (Fig. 9) broad, markedly cordate, midlateral and basolateral setae present; elytra with brilliant red metallic reflection, elytral silhouette distinctly subovoid, narrowed basally with lateral margins distinctly rounded, intervals flat; specimen from locality in Wallowa Mountains of Oregon (Fig. 32).

DERIVATION OF TAXON NAME.—I am pleased to name this species in honor of my friend and fellow collector, James R. LaBonte, who collected the first known specimen of this extraordinary species.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known only from the Willowa Mountains of northeastern Oregon. I have studied specimens from the following localities:

**United States of America**

OREGON: Willowa County, Glacier Lake (meadow below [2440 m]) [Sep.] (1; JRLa), West Fork Willowa River (0.25 to 0.5 miles NE of Frazier Lake [2040–2190 m]) [July] (57; CAS, JRLa).

***Nebria calva*, new species**

(Figures 10, 19, 26, 32)

**HOLOTYPE**, ♂, in CNC, labelled: "Ariz: Apache Co Mt. Baldy, 10–11000' SW of Springerville 13.VII.79, S & J Peck spruce-fir forest"/ "Holotype *Nebria calva* n. sp. det. D. H. Kavanaugh 1983" [red label]. **PARATYPES**: 10 (7 ♂ and 3 ♀), deposited in CAS and CNC.

**TYPE-LOCALITY.**—Mount Baldy (SW of Springerville), 3050–3350 m, Apache County, Arizona.

**DIAGNOSTIC COMBINATION.**—Head moderate in width and size, dark, with a pair of pale paramedial spots on vertex; pronotum (Fig. 10) with midlateral and basolateral setae present; elytra with faint but distinct metallic (violet) reflection, elytral silhouette subovoid, markedly narrowed basally, intervals moderately flat; median lobe of male (Fig. 19) with apex straight in ventral aspect; bursa copulatrix of female (Fig. 26) with very small bursal sclerite; specimen from locality in eastcentral Arizona (Fig. 32).

**DERIVATION OF TAXON NAME.**—The species epithet is formed from the Latin word for "bald" (= *calvus*), in reference to the type locality, Mount Baldy.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known only from Mount Baldy in eastern Arizona. I have studied specimens from the following locality:

**United States of America**

ARIZONA: Apache County, Mount Baldy (SW of Springerville [3050–3350 m]) [July] (11; CNC).

***Nebria sierrablancae*, new species**

(Figures 11, 20, 27, 32)

*Nebria trifaria catenata*; KAVANAUGH 1978:431 (in part).

**HOLOTYPE**, ♂, in CNC, labelled: "N. M. Lincoln Co. Sierra Blanca 10500' 18.VII.1969 A. Smetana"/ "Holotype *Nebria sierrablancae* n. sp. det. D. H. Kavanaugh 1983" [red label]. **PARATYPES**: 25 (10 ♂ and 15 ♀), deposited in CAS, CNC, and CUIC.

**TYPE-LOCALITY.**—Sierra Blanca, 3200 m, Lincoln County, New Mexico.

**DIAGNOSTIC COMBINATION.**—Body color uniformly rufous; head relatively large in relation

to pronotum, with a pair of pale paramedial spots on vertex; pronotum (Fig. 11) with lateral margin markedly sinuate basally, slightly to moderately angulate at middle, apical angles narrow and bluntly pointed, midlateral and basolateral setae present; elytra with faint metallic (violet) reflection, elytral silhouette subovoid, narrowed basally, intervals moderately flat; median lobe of male (Fig. 20) with apex deflected left laterally in ventral aspect; bursa copulatrix of female as in Fig. 27; specimen from locality in Capitan Mountains or Sierra Blanca of central New Mexico (Fig. 32).

**DERIVATION OF TAXON NAME.**—This species is named for Sierra Blanca, the type locality.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known only from Sierra Blanca and the Capitan Mountains of central New Mexico. I have studied specimens from the following localities:

**United States of America**

NEW MEXICO: Lincoln County, Capitan (1; CUIC), Sierra Blanca (Sierra Blanca Ski Area [3200–3510 m]) [July] (25; CNC).

***Nebria piute sevieri*, new subspecies**

(Figures 12, 21, 28, 32)

*Nebria trifaria trifaria*, auctorum—ERWIN AND BALL 1972:93 (in part)—KAVANAUGH 1978:430 (in part).

**HOLOTYPE**, ♂, in CAS, labelled: "U.S., Utah, Iron Co., Markagunt Plateau, 13.5 mi. s. Parowan, Hwy. 143, Parowan Cr., 9200', 21 June 71 D H Kavanaugh & E A Martinko"/ "D. H. Kavanaugh Collection" [orange label]/ "71–224" [orange label]/ "Holotype *Nebria piute sevieri* n. ssp. det. D. H. Kavanaugh 1983" [red label]/ "California Academy of Sciences Type No. 14344." **PARATYPES**: 230 (107 ♂ and 123 ♀), deposited in ANSP, CAS, CNC, KSUC, MCZ, OSUO, UASM, and USNM. All specimens studied have been designated as paratypes except for the single (female) specimen from Clay Springs, Navajo County, Arizona. At present, I believe that this specimen is mislabelled. However, form of the bursa copulatrix in this specimen differs markedly from that in other females of *N. piute sevieri*. This may be a teratological example, or, if the specimen is correctly labelled, it may represent a distinct form not yet adequately sampled. My identification of the specimen as belonging to this subspecies is therefore tentative, pending additional fieldwork in Arizona.

**TYPE-LOCALITY.**—Parowan Creek (13.5 miles S of Parowan), 2800 m, Markagunt Plateau, Iron County, Utah.

**DIAGNOSTIC COMBINATION.**—Body color uniformly rufopiceous or black; head moderate in width and size in relation to pronotum, with a pair of pale paramedial spots on vertex; antennal scape markedly narrowed basally; pronotum (Fig. 12) with lateral margin moderately sinuate basally, rounded at middle, apical angles relatively

broad and rounded, midlateral and basolateral setae present; elytra without metallic reflection, elytral silhouette elongate, subovoid or nearly ovoid, narrowed basally, intervals moderately flat; median lobe of male (Fig. 21) very thick basal to apical orifice, with apex moderate in length and broad in lateral aspect, deflected left laterally in ventral aspect; bursa copulatrix of female (Fig. 28) with bursal sclerite large, narrow in dorsal aspect; specimen from locality in southwestern Utah, east of Tushar Mountains and Midget Crest and west of Henry Mountains (Fig. 32).

**DERIVATION OF TAXON NAME.**—This subspecies is named for the Sevier River and Sevier Plateau, important physiographic features of the region occupied by members of this species.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known at present only from the montane region between Salina, Utah, and Cedar Breaks National Monument and east to the Boulder Mountains. I have studied specimens from the following localities:

#### United States of America

UTAH: Garfield County, Cottonwood Peak (38.5 miles SW of Antimony at Cottonwood Creek [2440 m]) [July] (72; CAS), Mount Dutton (23.4 miles SW of Antimony at North Fork Deep Creek [3120 m]) [July] (18; CAS); Iron County, Cedar Breaks National Monument ([3200 m]) [June–Aug.] (36; CAS, OSUC), Cedar Canyon (Coal Creek [2650 m]) [June] (6; CAS), The Mammoth ([3050 m]) [July] (17; ANSP, CAS, CNC, KSUC, MCZ, UASM, USNM), Parowan Creek (13.5 miles S of Parowan [2800 m]) [June] (10; CAS); Kane County, Long Valley Junction [Aug.] (12; CAS); Sevier County, Monroe Peak (8.6 [2640 m] and 12.4 [2990 m] miles SE of Monroe) [July] (3; CAS), Mount Marvine (0.1 miles N of Johnson Valley Reservoir at Sevenmile Creek [2590 m]) [Aug.] (10; CAS); Wayne County, Bluebell Knoll (31 miles S of Torrey [2440–3050 m]) [July] (46; CAS, USNM).

#### Doubtful Records:

UNITED STATES OF AMERICA—ARIZONA: Navajo County, Clay Springs [Sep.] (1; CAS).

### *Nebria steensensis*, new species

(Figures 12, 22, 29, 32)

**HOLOTYPE**, ♂, in CAS, labelled: “U.S.A., Oregon, Harney County, Steens Mountains, South Fork McCoy Creek, 2390–2560m, 14 July 1982, Stop #82–22 D. H. & J. L. Kavanaugh colls.”/ “D. H. Kavanaugh Collection” [orange label]/ “Holotype *Nebria steensensis* n. sp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14345.” **PARATYPES**: 106 (52 ♂ and 54 ♀), deposited in CAS, JRLa, PJJJo, UASM, and USNM.

**TYPE-LOCALITY.**—South Fork McCoy Creek, 2390–2560 m, Steens Mountains, Harney County, Oregon.

**DIAGNOSTIC COMBINATION.**—Body color uniformly black; head moderate in width and size in relation to pronotum, with a pair of pale paramedial spots on vertex; antennal scape slightly narrowed basally; pronotum (Fig. 13) with lateral margin very deeply sinuate basally, rounded at middle, apical angles relatively broad and rounded, basal angles rectangular, midlateral and basolateral setae present; elytra without metallic reflection, elytral silhouette subovoid, narrowed basally, intervals moderately flat; median lobe of male (Fig. 22) moderate in thickness basal to apical orifice, with distinct, projected ridge on right lateral surface, apex deflected left laterally in ventral aspect; bursa copulatrix of female (Fig. 29) with bursal sclerite small; specimen from locality in Steens Mountains of Oregon (Fig. 32).

**DERIVATION OF TAXON NAME.**—The species is named for the Steens Mountains.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known only from the Steens Mountains of south-central Oregon. I have studied specimens from the following localities:

#### United States of America

OREGON: Harney County, Fish Creek Gorge ([2190 m]) [July] (1; PJJJo), Kiger Headwall ([2680 m]) [Aug.] (1; PJJJo), Little Blitzen River ([2560 m]) [July] (16; PJJJo), Pate Lake ([2260 m]) [July] (1; PJJJo), South Fork McCoy Creek ([2390–2560 m]) [July] (88; CAS, JRLa).

### *Nebria trifaria pasquinelii*, new subspecies

(Figures 14, 23, 30, 32)

*Nebria trifaria coloradensis*; ERWIN AND BALL 1972:96 (in part).  
*Nebria trifaria trifaria*; KAVANAUGH 1978:430 (in part).

**HOLOTYPE**, ♂, in CAS, labelled: “Lefthand Cr., 5 mi. E. Ward, Colo. Bould. Co. 20 July 68”/ “D. H. Kavanaugh Collection” [orange label]/ “Holotype *Nebria trifaria pasquinelii* n. ssp. det. D. H. Kavanaugh 1983” [red label]/ “California Academy of Sciences Type No. 14346.” **PARATYPES**: 407 (224 ♂ and 183 ♀), deposited in ANSP, CArm, CAS, CNC, CUB, DEUN, EAMa, FMNH, KSUC, LACM, MCZ, MSU, ROM, RTBe, UAFA, UASM, UMMZ, USNM, UWEM, and ZMLS.

**TYPE-LOCALITY.**—Lefthand Creek (5 miles E of Ward), Front Range, Boulder County, Colorado.

**DIAGNOSTIC COMBINATION.**—Body color uniformly black; head moderate in width and size in relation to pronotum, with a pair of pale paramedial spots on vertex; antennal scape slightly arcuate, only slightly narrowed basally; pronotum (Fig. 14) with lateral margin moderately sinuate basally, rounded at middle, apical angles relatively broad and rounded, basal angles rectangular or slightly obtuse, midlateral and baso-

lateral setae present; elytra without metallic reflection, moderately dull, microsculpture moderately impressed, elytral silhouette subovoid, elongate, narrowed basally, intervals moderately flat, fifth interval interrupted, moderately or markedly catenate (with 3 to 10 catenations, restricted to apical one half or also on basal one-half of interval); median lobe of male (Fig. 23) slender basal to apical orifice, without ridge on right lateral surface, apex moderate in thickness and length and bent dorsally in lateral aspect, deflected left laterally in ventral aspect, apical orifice short, slightly constricted; bursa copulatrix of female (Fig. 30) with bursal sclerite small, narrow; specimen from locality in eastern ranges of Southern Rocky Mountains of central or northcentral Colorado or southeastern Wyoming (Fig. 32).

**DERIVATION OF TAXON NAME.**—This subspecies is named for Pasquinel, the enigmatic, indomitable French trapper in James A. Michener's epic novel, *Centennial*. The mountains traveled and loved by this fictional character are within the geographical range of this taxon and, in fact, include the type locality.

**GEOGRAPHICAL DISTRIBUTION.**—Figure 32. Known only from the easternmost ranges of the Southern Rocky Mountains, from the Medicine Bow and Sierra Madre Ranges of southeastern Wyoming south to the Rampart Range of southcentral Colorado. I have studied specimens from the following localities:

#### United States of America

**COLORADO:** (3; ANSP, KSUC, LACM); Boulder County, [Aug.] (1; CUB), Arapahoe Pass (2740–3050 m) [Aug.] (5; RTBe), Jenny Lake ([3200 m]) [July] (1; CArm), Lake Isabelle ([3170 m]) [July] (7; CArm), Jasper Lake ([3260 m]) [Aug.] (1; CArm), Lefthand Creek (5 miles E of Ward [2530 m]) [July–Aug.] (80; CArm, CAS), Little Royal Gorge [Aug.] (1; CUB), Long Lake ([3140 m]) [July, Sep.] (6; CArm), Mitchell Lake ([3290 m]) [July] (7; CArm, CUB), Rainbow Lakes (10 miles SW of Ward [3350 m]) [Aug.] (1; CNC), Red Rock Lake ([2900 m]) [Aug.] (6; CArm), South St. Vrain Creek ([3050 m]) [July] (1; CUB), Yankee Doodle Lake ([3140 m]) [July] (1; CArm); Clear Creek County, Leavenworth Valley (Argentine Road [2740–3350 m], Waldorf Mine [3540 m]) [June–July] (20; ANSP, CAS, CNC, DEUN, FMNH, MCZ, ROM, UMMZ, USNM, ZMLS), Mount Evans (Echo Lake [3230 m], Summit Lake [3960 m]) [July] (3; CAS, CNC), Silver Plume (2740–3050 m) [June] (6; ANSP, CAS, MCZ, UWEM); El Paso County, Gold Camp Road (9 miles W of Broadmoor at South Cheyenne Creek [2650–2740 m]) [July–Aug.] (50; CAS, EAMa); Gilpin County, Rollinsville area [July] (1; CArm); Jackson County, Cameron Pass ([3140 m]) [Aug.] (1; UASM); Larimer County, Bennett Creek [May–July] (18; RTBe), Browns Lake Trail [Aug.] (1; RTBe), Buckhorn Creek [July] (2; RTBe), Cameron Pass

([3050 m]) [June, Aug.] (6; MSU, RTBe, UASM, USNM), Crown Point Road (at Bennett Springs [2290–2350 m], at Crown Point Trail [3140–3200 m], 40 miles W of Bellevue [2740 m]) [June–Aug.] (20; CAS, RTBe, UASM, USNM), Monument Gulch [July] (18; RTBe), North Fork Cache la Poudre River [June] (2; RTBe), Zimmerman Lake [Aug.] (5; RTBe), West Fork Sheep Creek (16 miles W of Teds Place [3050 m]) [Aug.] (3; CNC); Park County, Kenosha Pass [July] (1; CAS); Rocky Mountain National Park, Blue Lake [July] (3; RTBe), Chasm Lake (stream below) [Aug.] (3; CArm), Endovalley Campground [Aug.] (4; RTBe), Fall River ([2620 m]) [Aug.] (1; UASM), Hang Lake [Aug.] (1; RTBe), Lake Haiyaha [Aug.] (3; UAFA), Longs Peak ([3050–3350 m]) and Boulder Field [3840 m], Larkspur Creek [July–Aug.] (27; CArm, CAS), Thunder Lake ([3080 m]) and Thunder Lake Trail [2500–3350 m]) [June] (2; CArm); Routt County, Walton Creek (above Dumont Lake [2900–2960 m]) [Aug.] (3; CAS); Teller County, Divide (8 miles S on Cripple Creek Road [2900 m]) [July] (2; CNC). **WYOMING:** Albany County, Brooklyn Lane ([3200 m]) [July] (18; CAS), Centennial [Aug.] (1; MSU), Douglas Creek (1 mile SSE of Keystone [2440 m]) [July] (16; CAS), Laramie Peak (south slope at Friend Creek [2440 m]) [July] (20; CAS), Little Brooklyn Lake ([3120 m]) [July] (8; CAS), Snowy Range Pass ([3200 m]) [June] (8; UASM); Carbon County, South Brush Creek (20 miles SE of Saratoga [2470 m]) [July] (1; CAS), Hidden Treasure Gulch (11.5 miles WSW of Encampment [2870 m]) [July] (2; CAS), Silver Lake ([3170 m]) [July] (2; USNM), Slaughterhouse Gulch (11 miles SW of Encampment [2870 m]) [July] (6; CAS).

**Specimens Without Locality Data:** (1; USNM).

#### NOMENCLATORIAL CHANGES

Since my last two reports on Nearctic *Nebria* (Kavanaugh 1979 and 1981), additional specimens and data about geographical and habitat distribution have also accumulated for previously described taxa. Study of these specimens and data, re-examination of some previously studied materials, and re-evaluation of species and subspecies concepts developed in previous reports (Kavanaugh 1978, 1979, and 1981) lead me to propose the nomenclatorial changes presented below. More complete discussions of proposed synonymies and changes in status of names will be presented in a forthcoming monography of Nearctic *Nebria*.

***Nebria intermedia* VAN DYKE, 1949:49 [= *Nebria crassicornis intermedia* Van Dyke—NEW STATUS].**

Analysis of the pattern of geographical variation shown by samples representing *Nebria crassicornis* Van Dyke (1925:121) and *N. intermedia* Van Dyke throughout their ranges suggests that these taxa represent allopatric forms that are clearly differentiated but not to a degree typical of closely related, sympatric species. I suggest

that they be considered subspecies of a single species, *N. crassicornis*.

***Nebria sonora*** KAVANAUGH, 1981:438 [= *Nebria acuta sonora* Kavanaugh—NEW STATUS].

My description of *N. sonora* was based on only one male and two female specimens. These specimens were only slightly, but consistently, different from specimens of *Nebria acuta acuta* Lindroth in several characters of external structure. However, form of the aedeagus of the male specimen (chosen as holotype) was so different from that of *N. acuta acuta* males that I had no doubt concerning specific distinctiveness of the two taxa.

Several additional male specimens of *N. sonora* recently collected and studied all have aedeagi with form typical of *N. acuta acuta* males. I now conclude that the aedeagus of the holotype male of *N. sonora* is not typical for that taxon and, further, that the two forms are conspecific. However, differences in external structural characters between specimens of *N. sonora* and *N. acuta acuta* are both consistent and sufficient to support their status as allopatric subspecies of a single species.

***Nebria fragilis*** CASEY, 1924:21 [= *Nebria arkansana fragilis* Casey—NEW STATUS].

***Nebria arkansana uinta*** Kavanaugh, 1979:102 [= *Nebria arkansana fragilis* Casey—NEW SYNONYMY].

***Nebria fragilis teewinot*** Kavanaugh, 1979:103 [= *Nebria arkansana fragilis* Casey—NEW SYNONYMY].

Males of *Nebria arkansana arkansana* Casey and *N. a. edwardsi* Kavanaugh differ distinctly from males of "*Nebria fragilis* Casey" in form of aedeagus and in several characters of external structure. Male specimens from the Uinta and northern Wasatch Mountains of northern Utah share aedeagal form with males of the two *N. arkansana* subspecies just mentioned, yet differ from them slightly in characters of external structure. I therefore recognized (Kavanaugh 1979) these specimens as representing a distinct subspecies of *N. arkansana*, namely *N. a. uinta*. Male specimens from the Teton, Wind River, and adjacent Mountains in western Wyoming share aedeagal form with males of *N. fragilis*; but, again, they differ from the latter in several characters of external structure and color. Based on these

similarities and differences, I recognized (Kavanaugh 1979) the Wyoming specimens as representing a distinct subspecies of *N. fragilis*, namely *N. f. teewinot*. The resulting pattern of geographical distribution was one in which the range of all subspecies of both *N. arkansana* and *N. fragilis* were mutually allopatric, although ranges of *N. arkansana uinta* and *N. fragilis fragilis* were essentially parapatric in northcentral Utah.

Since 1979 I have studied additional material from areas that previously represented gaps between the allopatric ranges of described subspecies, and I re-examined specimens studied earlier. These studies have shown that samples of males from localities in presumed gaps, as well as some samples from localities bordering these gaps, are mixed in aedeagal form and intermediate in characters of external structure in relation to respective allopatric forms. Such findings lead me to conclude that *N. arkansana* and *N. fragilis* are conspecific. Specimens representing *N. arkansana uinta*, *N. fragilis fragilis*, and *N. f. teewinot* all share a combination of structural features which distinguish them from members of other *N. arkansana* subspecies. I therefore suggest that these forms (and respective intermediates between them) together represent a single, distinct subspecies of *N. arkansana* for which the name *N. arkansana fragilis* has priority. A reconstruction of the historical development of the complex pattern of geographical variation within this subspecies will be presented in the monograph now in preparation.

***Nebria trifaria tetonensis*** ERWIN AND BALL, 1972:95 [= *Nebria trifaria trifaria* LeConte—NEW SYNONYMY].

Based on an almost continuous series of samples (all collected after 1972) from the area between respective type localities for *N. trifaria trifaria* and *N. trifaria tetonensis*, I suggest that these two nominal taxa represent simply the extremes of continuous clinal variation in those characters previously used to distinguish their members.

***Nebria trifaria piute*** ERWIN AND BALL, 1972:95 [= *Nebria piute piute* Erwin and Ball—NEW STATUS].

Members of *Nebria piute* and *N. trifaria* LeConte differ from each other at least as much

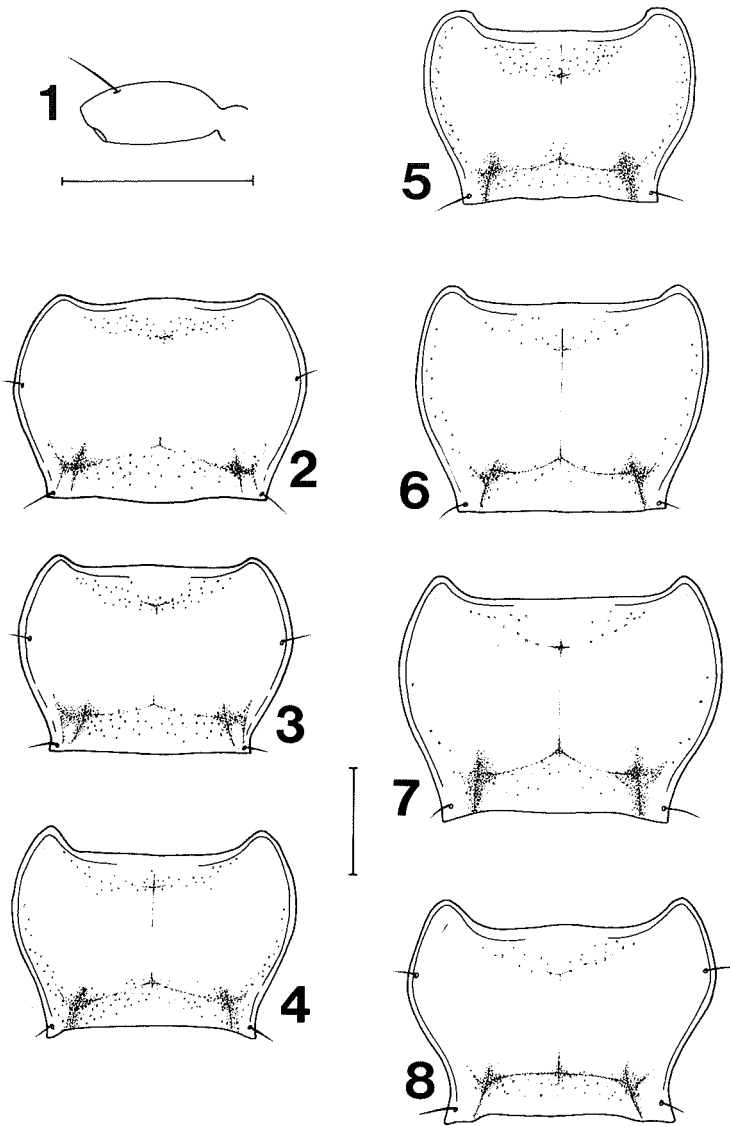
as other closely related, but sympatric, species in characters of both external structure and genitalia (of both males and females). I therefore suggest that they represent distinct species.

***Nebria trifaria utahensis*** KAVANAUGH, 1979: 110  
[=*Nebria piute utahensis* Kavanaugh—NEW STATUS].

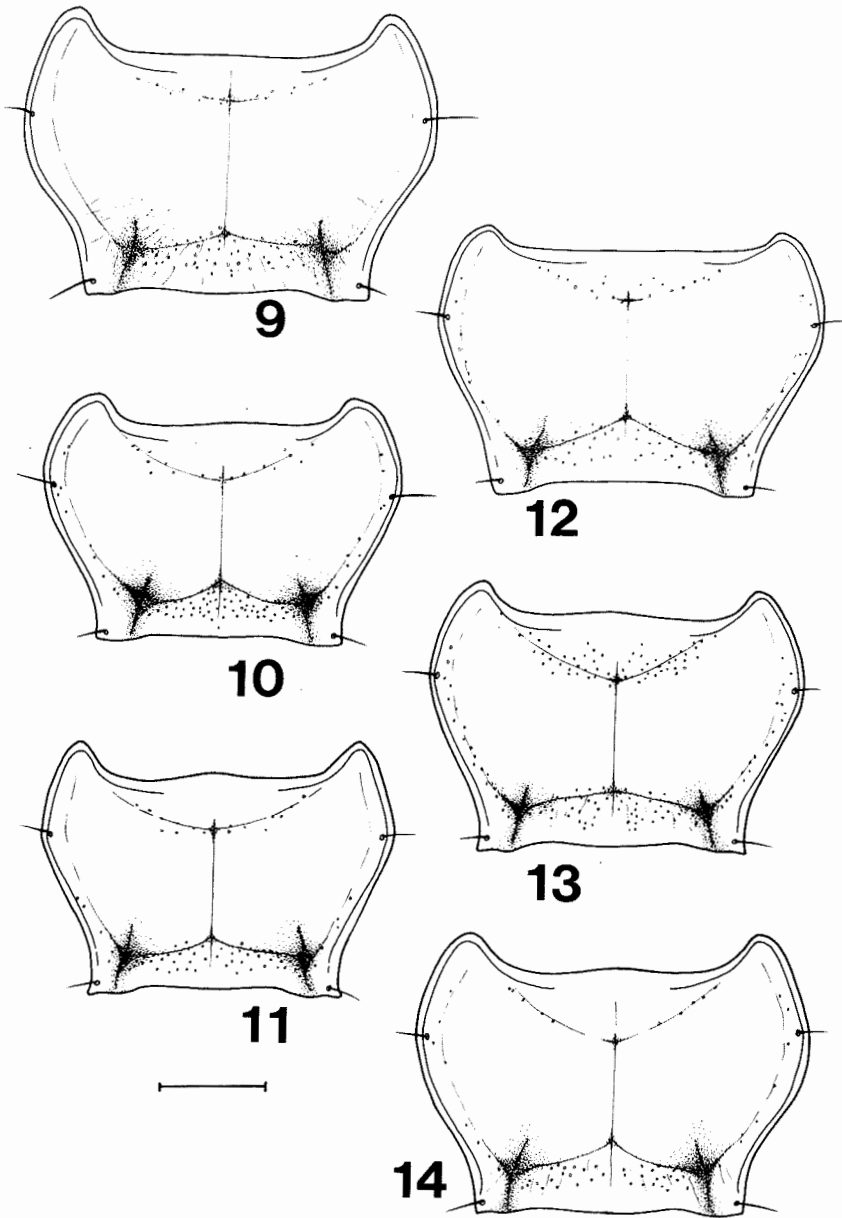
Based on form of aedeagus of males and bursa copulatrix of females, *N. utahensis*, described as a subspecies of *N. trifaria* LeConte, should instead be considered a subspecies of *N. piute*, along with *N. piute sevieri* n.ssp. described above.

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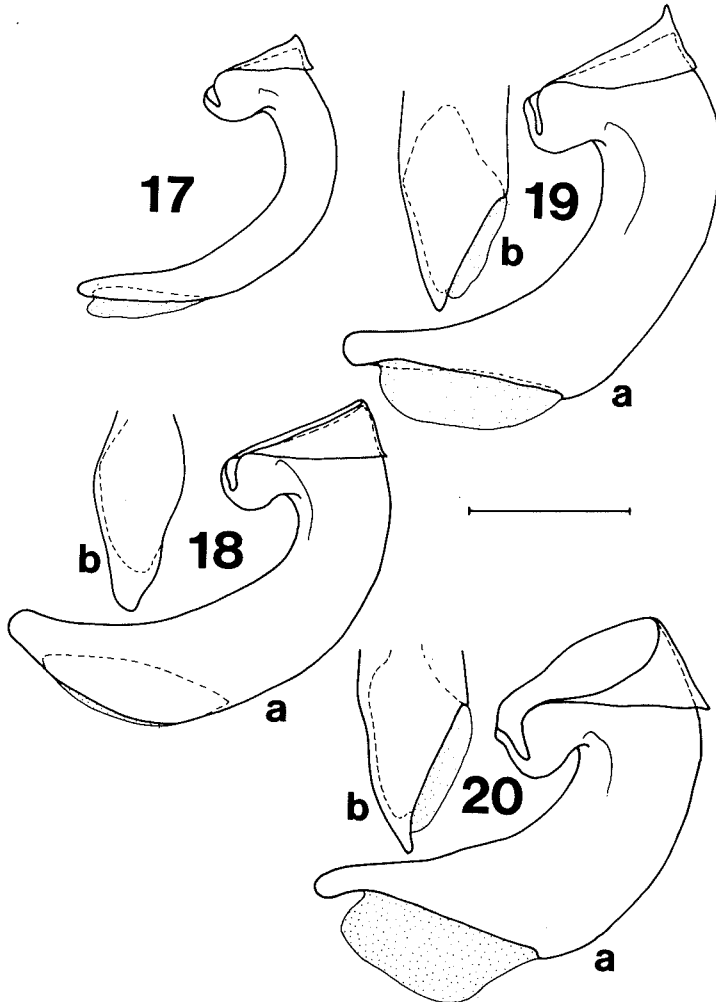
FIGURES 1-8. Fig. 1. Right antennal scape, dorsal aspect, *Nebria gebleri albimontis* n.ssp. (Birch Creek, California); scale line = 1.0 mm. Figs. 2-8. Pronotum, dorsal aspect; scale line = 1.0 mm. 2. *Nebria altisierrae* n.sp. (Olmsted Point, California). 3. *Nebria campbelli* n.sp. (Mount Baker, Washington). 4. *Nebria wallowae* n.sp. (West Fork Wallowa River, Oregon). 5. *Nebria jeffreyi* n.sp. (South Fork McCoy Creek, Oregon). 6. *Nebria haida* n.sp. (Mount Needham, Queen Charlotte Islands, British Columbia). 7. *Nebria louiseae* n.sp. (Skedans, Queen Charlotte Islands, British Columbia). 8. *Nebria gebleri albimontis* n.ssp. (Birch Creek, California).



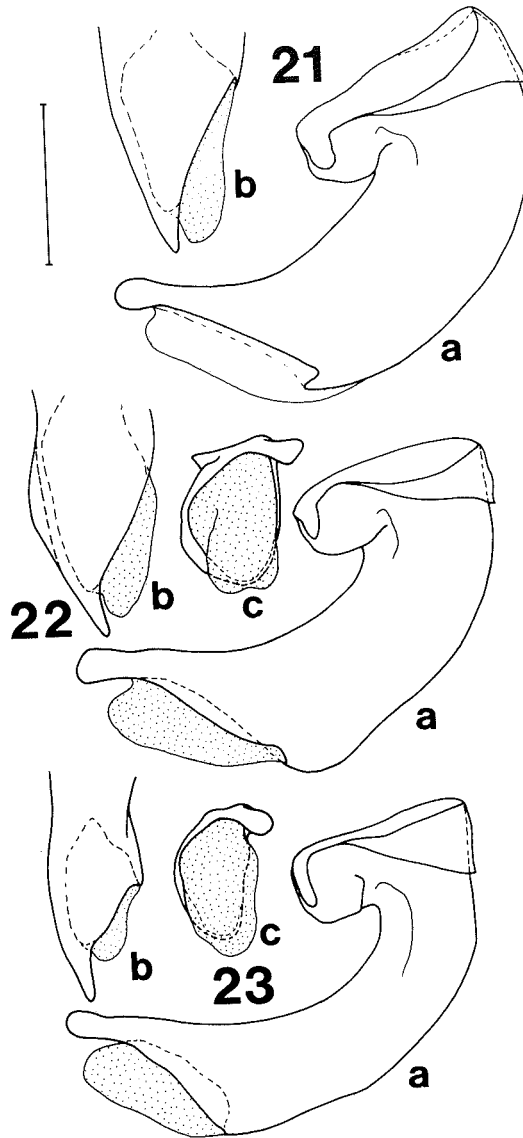
FIGURES 9-14. Pronotum, dorsal aspect; scale line = 1.0 mm. 9. *Nebria labonteii* n.sp. (West Fork Wallowa River, Oregon). 10. *Nebria calva* n.sp. (Mount Baldy, Arizona). 11. *Nebria sierrablancae* n.sp. (Sierra Blanca, New Mexico). 12. *Nebria piute severi* n.ssp. (Parowan Creek, Utah). 13. *Nebria steensensis* n.sp. (South Fork McCoy Creek, Oregon). 14. *Nebria trifaria pasquinelii* n.ssp. (Lefthand Creek, Colorado).



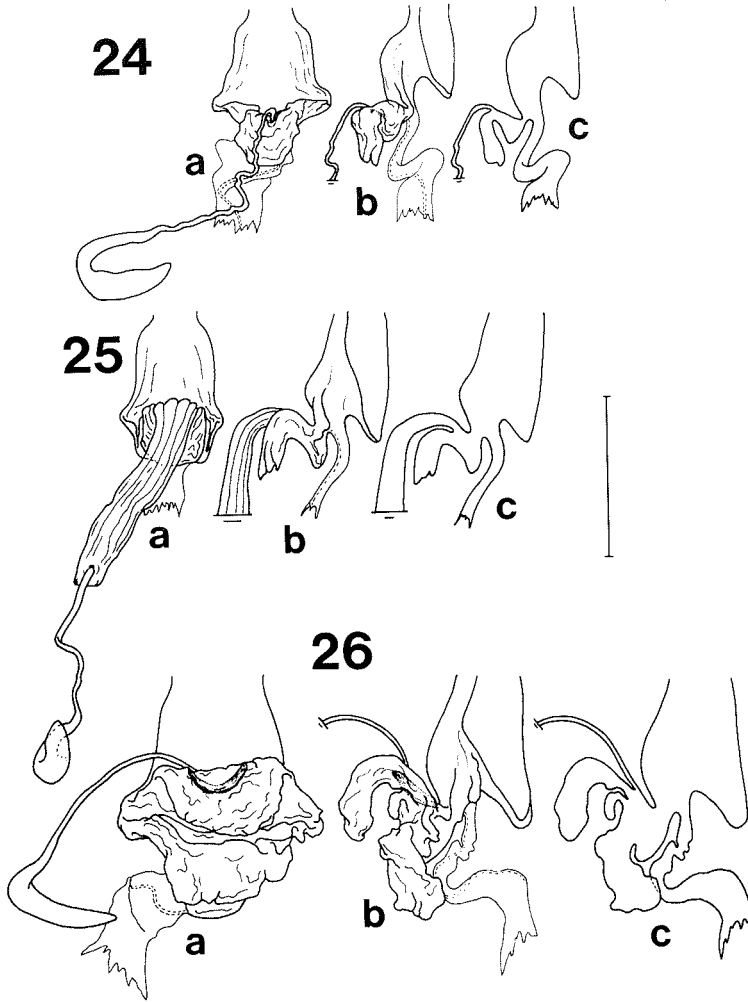
FIGURES 15-16. Basal region of left elytron, dorsal aspect; scale line = 1.0 mm. 15. *Nebria altisierrae* n.sp. (Olmsted Point, California). 16. *Nebria campbelli* n.sp. (Mount Baker, Washington).



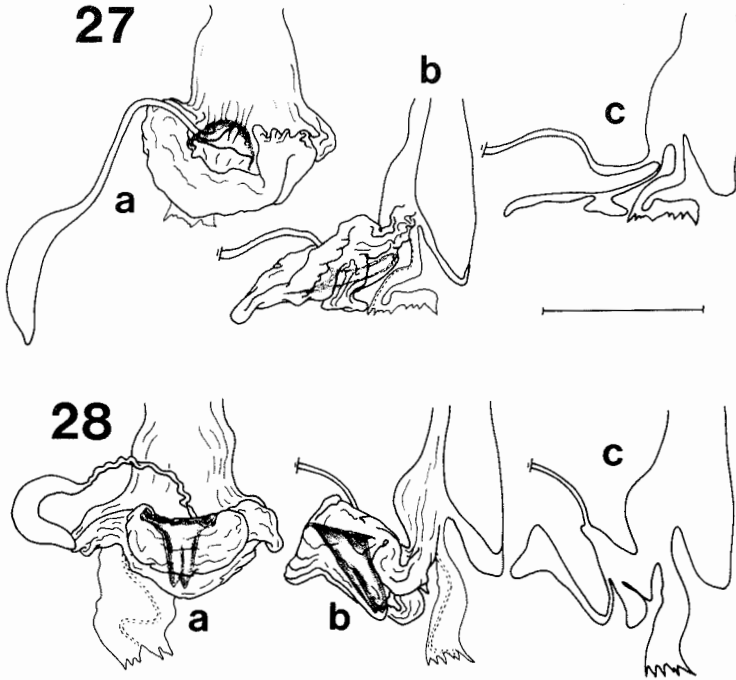
FIGURES 17-20. Median lobe of male genitalia, left lateral aspect (or a = left lateral aspect, b = ventral aspect); scale line = 1.0 mm. 17. *Nebria wallowae* n.sp. (West Fork Willowa River, Oregon). 18. *Nebria gebleri albimontis* n.sp. (Birch Creek, California). 19. *Nebria calva* n.sp. (Mount Baldy, Arizona). 20. *Nebria sierrablancae* n.sp. (Sierra Blanca, New Mexico).



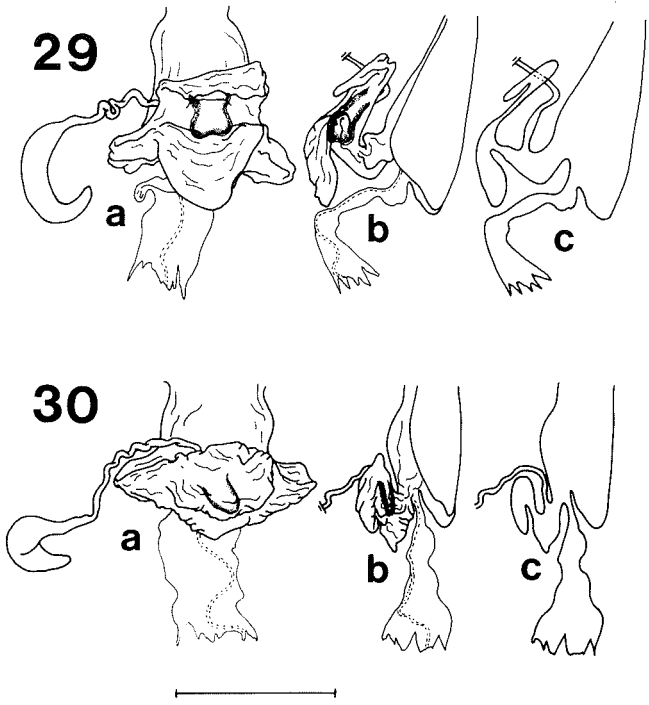
FIGURES 21-23. Median lobe of male genitalia (a = left lateral aspect, b = ventral aspect, c = apical aspect); scale line = 1.0 mm. 21. *Nebria piute sevieri* n.ssp. (Parowan Creek, Utah). 22. *Nebria steensensis* n.ssp. (South Fork McCoy Creek, Oregon). 23. *Nebria trifaria pasquineli* n.ssp. (Lefthand Creek, Colorado).



FIGURES 24–26. Bursa copulatrix of female (a. dorsal aspect; b. left lateral aspect; c. mid-sagittal outline, left lateral aspect); scale line = 1.0 mm. 24. *Nebria wallowae* n.sp. (West Fork Wallowa River, Oregon). 25. *Nebria gebleri albimontis* n.ssp. (Birch Creek, California). 26. *Nebria calva* n.sp. (Mount Baldy, Arizona).



FIGURES 27-28. Bursa copulatrix of female (a. dorsal aspect; b. left lateral aspect; c. mid-sagittal outline, left lateral aspect); scale line = 1.0 mm. 27. *Nebria sierrablancae* n.sp. (Sierra Blanca, New Mexico). 28. *Nebria piute sevieri* n.ssp. (Parowan Creek, Utah).



FIGURES 29-30. Bursa copulatrix of female (a. dorsal aspect; b. left lateral aspect; c. mid-sagittal outline, left lateral aspect); scale line = 1.0 mm. 29. *Nebria steensensis* n.sp. (South Fork McCoy Creek, Oregon). 30. *Nebria trifaria pasquineli* n.ssp. (Lefthand Creek, Colorado).

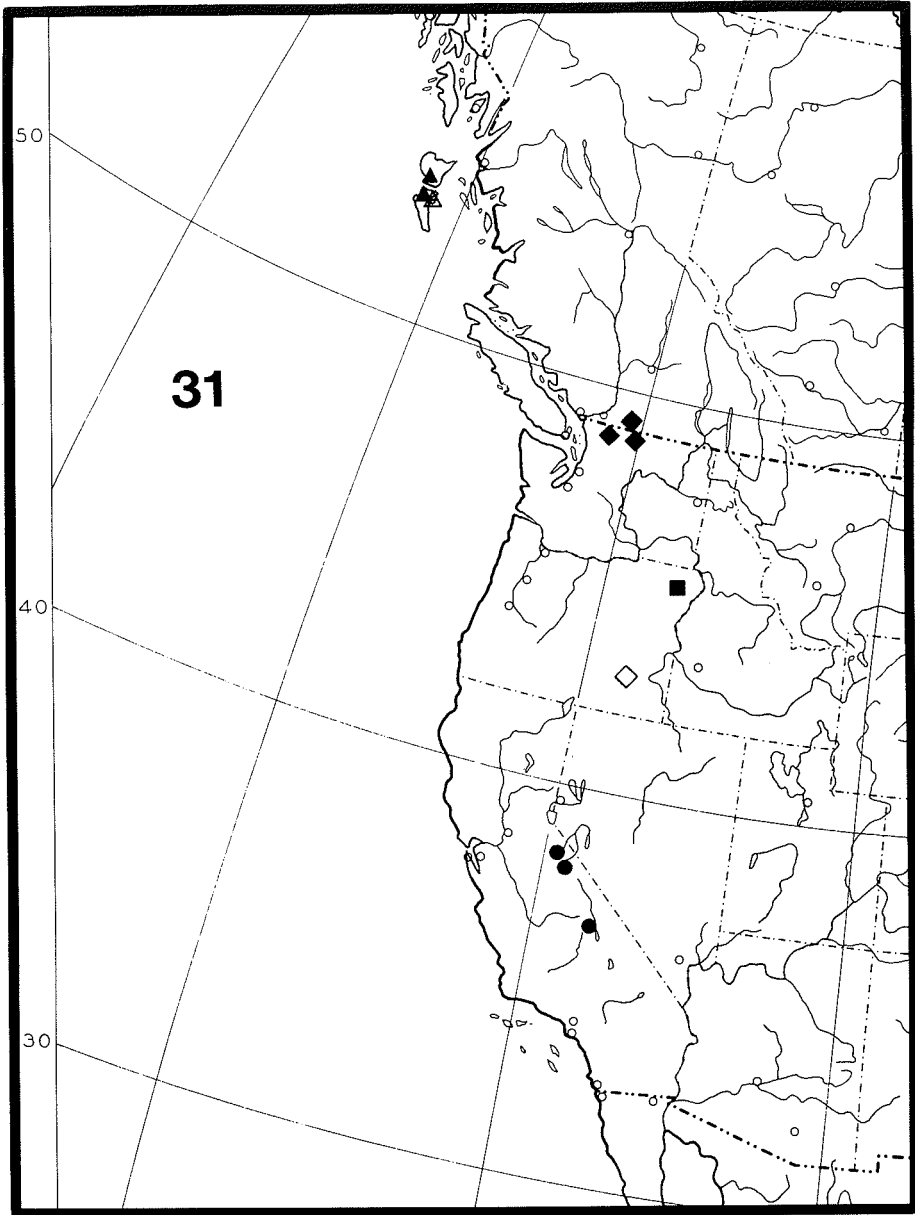


FIGURE 31. Map of geographical distributions: *Nebria altisierrae* n.sp. = solid circle; *Nebria campbelli* n.sp. = solid diamond; *Nebria wallowae* n.sp. = solid square; *Nebria jeffreyi* n.sp. = open diamond; *Nebria haida* n.sp. = solid triangle; *Nebria louiseae* n.sp. = open triangle.

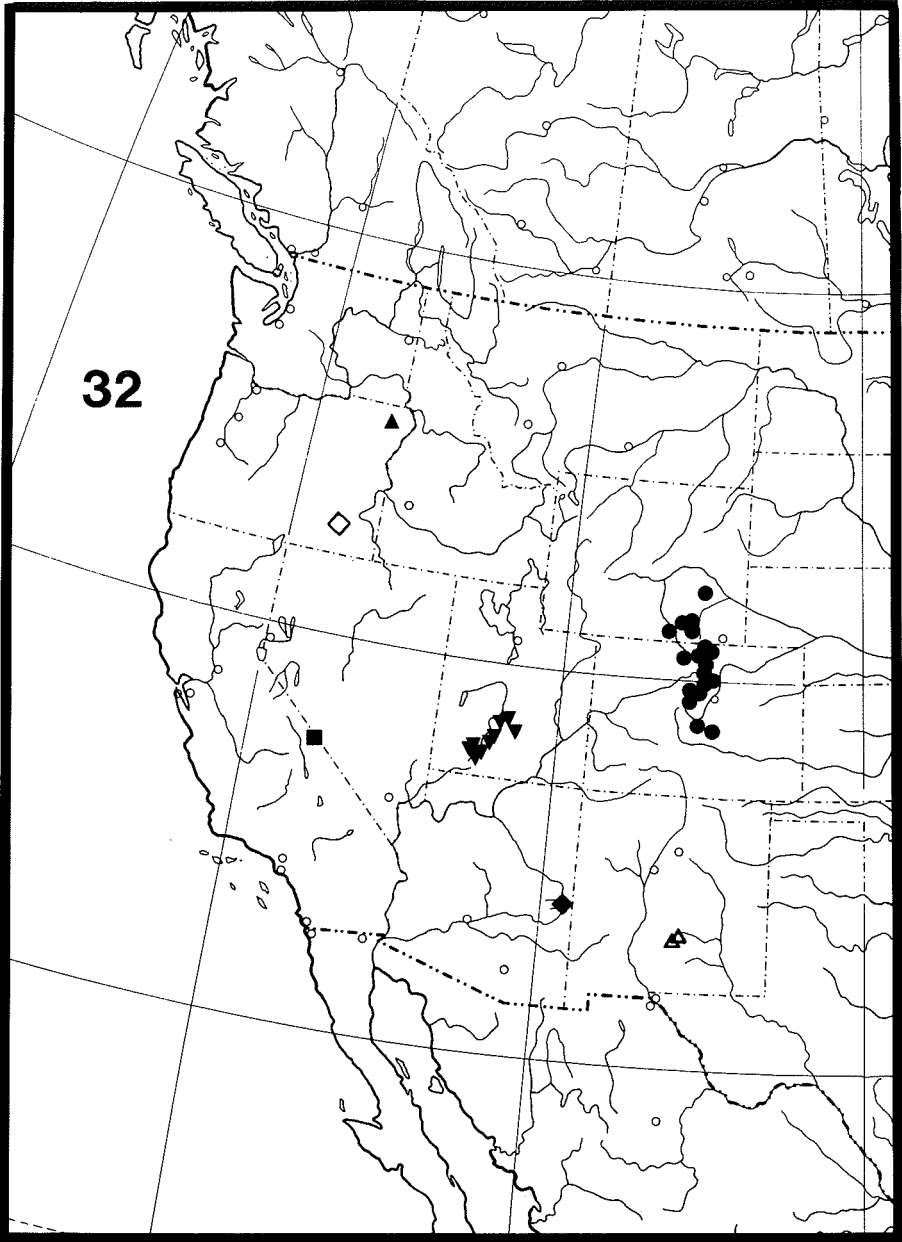


FIGURE 32. Map of geographical distributions: *Nebria gebleri albimontis* n.sp. = solid square; *Nebria labonte* n.sp. = solid triangle; *Nebria calva* n.sp. = solid diamond; *Nebria sierrablancae* n.sp. = open triangle; *Nebria piute severi* n.sp. = inverted solid triangle; *Nebria steensensis* n.sp. = open diamond; *Nebria trifaria pasquinelii* n.sp. = solid circle.